



RECEIVED

AUG 13 2003

SEQUENCE LISTING

TECH CENTER 1600/2900

<110> Council of Scientific and Industrial Research

<120> Chiral, Charged peptide Nucleic Acid Oligomers from Cyclic Monomers

<130> 0421-NF-206/00

<140> US09/666144

<141> 2002-09-20

<160> 13

<170> PatentIn version 3.1

<210> 1

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention

<220>

<221> MISC_FEATURE

<222> (1) . . . (7)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE
<222> (8)..(8)
<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> b-Ala

<400> 1
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 2
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> This is a synthetic sequence incorporating monomer of invention
<220>
<221> MISC_FEATURE
<222> (1)..(3)
<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>
<221> MISC_FEATURE
<222> (5)..(7)
<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine

through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (4) .. (4)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (8) .. (8)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (9) .. (9)

<223> b-Ala

<400> 2

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 3

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (6)..(6)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (9)..(9)

<223> b-Ala

<400> 3

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 4

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention
<220>
<221> MISC_FEATURE
<222> (1)..(8)
<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)
1)proline through position 1 of the heterocycle

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> b-Ala

<400> 4
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 5
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> This is a synthetic sequence incorporating monomer of invention
<220>
<221> MISC_FEATURE
<222> (1)..(8)
<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine
through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (9)..(9)

<223> b-ala

<400> 5

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 6

<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention

<220>

<221> MISC_FEATURE

<222> (1)..(2)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (4)..(5)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine

through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (7) .. (8)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine
through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (10) .. (10)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine
through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (12) .. (12)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine
through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (6) .. (6)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine
through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (9) .. (9)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine
through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (11)..(11)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (13)..(13)

<223> b-Ala

<400> 6

Xaa
1 5 10

<210> 7

<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (6)..(6)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (9)..(9)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (11)..(11)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (12)..(12)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (13)..(13)

<223> b-Ala

<220>

<221> MISC_FEATURE

<222> (1)..(2)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (4)..(5)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (7)..(8)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (10)..(10)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<400> 7

Xaa
1 5 10

<210> 8

<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention

<220>

<221> MISC_FEATURE

<222> (1) .. (2)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (4) .. (5)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (7) .. (8)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (10) .. (10)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (12) .. (12)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE
<222> (3) .. (3)
<223> Adenine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 9 of the heterocycle

<220>
<221> MISC_FEATURE
<222> (6) .. (6)
<223> Adenine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 9 of the heterocycle

<220>
<221> MISC_FEATURE
<222> (9) .. (9)
<223> Adenine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 9 of the heterocycle

<220>
<221> MISC_FEATURE
<222> (11) .. (11)
<223> Adenine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 9 of the heterocycle

<220>
<221> MISC_FEATURE
<222> (13) .. (13)
<223> b-Ala

<400> 8
Xaa
1 5 10

<210> 9

<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Adenine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (5)..(6)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (8)..(9)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)
1)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (11)..(12)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)
1)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Adenine heterocycle is attached at C4 position of N1-(2-aminoethyl)
1)proline through position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Adenine heterocycle is attached at C4 position of N1-(2-aminoethyl)
1)proline through position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (10)..(10)

<223> Adenine heterocycle is attached at C4 position of N1-(2-aminoethyl)
1)proline through position 9 of the heterocycle

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> b-Ala

<400> 9
Xaa
1 5 10

<210> 10
<211> 21
<212> PRT
<213> Artificial sequence

<220>
<223> This is a synthetic sequence incorporating monomer of invention
<220>
<221> MISC_FEATURE
<222> (1)..(3)
<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine
through the N-acetyl group at position 1 of the heterocycle

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine
through the N-acetyl group at position 1 of the heterocycle

<220>
<221> MISC_FEATURE

<222> (7) .. (7)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (14) .. (14)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (16) .. (16)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (18) .. (20)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (15) .. (15)

<223> Cytosine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (17) .. (17)

<223> Cytosine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Cytosine heterocycle is attached to C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (6)..(6)

<223> Cytosine heterocycle is attached to C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (21)..(21)

<223> b-Ala

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Lys

<220>

<221> MISC_FEATURE

<222> (10)..(10)

<223> Lys

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Lys

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> w-aminocaproic acid

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> w-aminocaproic acid

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> w-aminocaproic acid

<400> 10
Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

<210> 11
<211> 21
<212> PRT
<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention

<220>

<221> MISC_FEATURE

<222> (1) .. (3)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (5) .. (5)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (7) .. (7)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (14) .. (14)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (16) .. (16)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (18)..(20)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (15)..(15)

<223> Cytosine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (17)..(17)

<223> Cytosine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (21)..(21)

<223> b-Ala

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Guanine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (6)..(6)

<223> Guanine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Lys

<220>

<221> MISC_FEATURE

<222> (10)..(10)

<223> Lys

<220>

<221> MISC_FEATURE

<222> (12)..(12)

<223> Lys

<220>

<221> MISC_FEATURE

<222> (9)..(9)

<223> w-aminocaproic acid

<220>

<221> MISC_FEATURE

<222> (11) .. (11)

<223> w-aminocaproic acid

<220>

<221> MISC_FEATURE

<222> (13) .. (13)

<223> w-aminocaproic acid

<400> 11

Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

<210> 12

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention

<220>

<221> MISC_FEATURE

<222> (1) .. (1)

<223> Guanine heterocycle is attached to N-acetyl(2-aminoethyl)glycine
through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (4) .. (4)

<223> Guanine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Cytosine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (9)..(9)

<223> Cytosine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (6)..(6)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (10)..(10)

<223> Thymine heterocycle is attached at C4 position of N1-(2-aminoethyl)proline through position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (11)..(11)

<223> b-Ala

<400> 12

Xaa
1 5 10

<210> 13

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> This is a synthetic sequence incorporating monomer of invention

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> Guanine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Guanine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (6)..(6)

<223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (10)..(10)

• <223> Thymine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Adenine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 9 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Cytosine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (9)..(9)

<223> Cytosine heterocycle is attached to N-acetyl(2-aminoethyl)glycine through the N-acetyl group at position 1 of the heterocycle

<220>

<221> MISC_FEATURE

<222> (3)..(3)

